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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/194,562	04/09/1999	MATS LEIJON	705/71502-2/	3347

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EXAMINER
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MULLINS, BURTON S

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/194,562	<b>Applicant(s)</b> LEIJON ET AL.	
	<b>Examiner</b> Burton S. Mullins	<b>Art Unit</b> 2834	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 June 2002.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 10-20 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 1-8 and 10-17 is/are allowed.  
 6) ☒ Claim(s) 18-20 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Suspension***

1. Pursuant to the Board of Appeal's final decision regarding U.S. Application No. 08/973,019, suspension has been lifted. As set forth in the decision on petition requesting suspension, the instant application was granted a suspension pending the decision on appeal of the '019 application. On November 27, 2002, the Board affirmed the rejection of the '019 application and on August 27, 2003, the Board denied applicant's request for reconsideration, thus terminating prosecution of the '019 application. An action on the merits follows.

### ***Claim Objections***

2. Claims 18 and 20 are objected to because of the following informalities: In claim 18, line 5, change "being concentric" to ---is concentric---. On line 6, insert an ---a--- before "solid insulating layer".

In claim 20, line 6, change "outwardly of the ends" to ---outwardly from the ends---. On line 7, insert an ---an--- before "arc shaped end coil". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck in view of "Electric Motors & Generators Illustrated"(pp.112-113) and Elton (US 4,853,565). Shildneck teaches a high voltage rotating electric machine having a magnetic

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circuit comprising: a stator having a magnetic core 14 (Fig.3), said stator being formed with end portions (not numbered) and slots 15/16 extending between the end portions (Fig.3), and a winding 18 in the form of a cable being continuously threaded in the stator slots in a plurality of planar layers (Fig.1) and wherein the winding has end winding portions extending outwardly of the ends of the stator between selected slots (Fig.3), said end winding portions in each of said plurality of layers having arc shaped end coil (Fig.3).

Shildneck does not teach: 1) a concentric winding (claim 18) or concentric arc-shaped end coils (claim 20); and 2) a cable comprising a conductor including a plurality of conductive strands, an inner semiconducting layer surrounding the inner layer, a solid insulating layer surrounding the inner layer, and an outer semiconducting layer surrounding the insulating layer.

Regarding (1), concentric coils for armature windings are well known. The publication "Electric Motors & Generators Illustrated" (Philosophical Library, New York, 1959, pp.112-113) teaches that concentric armature windings "have the advantage that the coils of different phases are kept apart and do not touch each other, with the result that breakdown of insulation between phases rarely occurs." Further, "[i]t is unnecessary to insulate the end connectors to withstand the full pressure between phases."

Regarding (2), Elton teaches a high-voltage, electrical cable comprising current-carrying conductors 102 (Fig.7); an inner, semi-conducting "grading" layer 104 made of pyrolyzed glass fibers (c.7, lines 19-20) surrounding and being in electrical contact with the current-carrying conductor 102; a solid insulation layer 106 surrounding and contacting the inner layer; and an outer layer 110 having semi-conducting properties surrounding and

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contacting the solid insulating layer 106, as well as being in contact with ground, to thus bleed off static charge and thus prohibiting development of corona discharge (c.7, lines 23-28; lines 64-68). In another form, a predetermined reference potential may be coupled to the semi-conducting layer (c.8, lines 13-21).

It would have been obvious to one having ordinary skill to modify Shildneck's high voltage machine winding and provide concentric end coils per "Electric Motors & Generators Illustrated" since this would have been desired to keep coils of different phases apart such that breakdown of the insulation therebetween would not occur; and further to provide a high voltage, electrical cable per Elton with grounded inner and outer semi-conductors separated by an insulator since such a cable would have been desirable to prohibit development of corona discharge.

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck in view of "Electric Motors & Generators Illustrated"(pp.112-113) and Elton et al. as applied to claim 18 above, and further in view of Breitenbach et al. (USP 4,785,138).

Shildneck in view of "Electric Motors & Generators Illustrated" and Elton et al. disclose the claimed invention except for the feature of an outer metal screening and a sheath in the winding cable.

Breitenbach et al. teach that is known to use an outer metal screening and sheath in an electrical cable to provide shielding as well as increase cable reliability (c.2, lines 32-44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the metal screening and sheath as taught by Breitenbach et al. to the device as disclosed by Shildneck in view of "Electric Motors & Generators Illustrated"

and Elton et al. since such a modification would have provided shielding as well as increase cable reliability.

***Allowable Subject Matter***

6. Claims 1-8 and 10-17 are allowed.

***Response to Arguments***

7. Applicant's arguments with respect to claims 18-20 have been considered but are moot in view of the new ground(s) of rejection. Further, insofar as they pertain to the current rejections, applicant's arguments filed June 3, 2002 have been considered but they are not persuasive. Applicant argues that Elton's cable is rigid and not flexible and would not be suitable for use in Shildneck's machine. The examiner notes that Elton's windings 50 "initially extend axially and then bend circumferentially so as to provide a connection between one bar and a second circumferentially disposed bar in the stator core" (c.5, line 66-c.6, line 1). The manner of bending is shown in Fig.5. Thus, adequate "flexibility" is provided by such a bend. Also, Elton's teaching at c.8, lines 3-9 that "the semi-conducting layer is a glass fiber which can be chopped, mixed with resin and molded, or blown on any complex shaped substrate [so that] the layer can be placed in intimate contact with substantially all of the exterior surface of the insulator or housing..." suggests that the semi-conducting layer can be "molded" or "blown" onto a cable without causing cable rigidity. Elton also refers to US 4,510,077 (Elton '077), incorporated by reference therein, for a detailed description of the characteristics of the cable material. Elton '077 teaches that a lubricant may be used in the material "to impart

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lubrication to and between the individual glass fibers, and as such permits the threads and cloths manufactured from these fibers to be subjected to mechanical stresses as incurred by bending, folding and twisting without breakage of the fibers” (c.4, lines 8-16). Thus, Elton ‘077 teaches how to make the semi-conductive material cable flexible.

With regard to applicant’s assertion that one of ordinary skill would not have a reasonable expectation of success if the machine in Shildneck were modified with high voltage cables such as Elton because the resultant combination would cause the semiconducting layer to crack, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, Elton’s cable winding minimizes the possibilities of corona discharge. Further, given Elton’s explicit desire to prevent corona discharge in stator core windings, it is unreasonable to assume that one of ordinary skill would allow the cable to “crack” when wound around a core.

Applicant argues that Shildneck is a high current/low voltage machine and would not work in a high voltage environment. However, the examiner notes that the specification defines “high voltage” as being 10kV or greater (p.1, lines 7-8). Shildneck was described in the declaration of Mr. Robert Fenton to operate at voltages from 10kV to 15 kV (p.19, paragraph 43) and hence can be defined by applicant’s own terms as a “high voltage” machine. Although the claims are interpreted in light of the specification, limitations from the

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specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Information Disclosure Statement***

8. The examiner requests a courtesy copy of the initialed IDS (PTO-1449), Paper No.9, mailed out with the office action of September 14, 2000. In the present electronic file, a copy of this paper cannot be located.

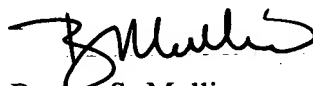


*Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

19 March 2004  
bsm